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AD8932USNA

Applicants' Reply Brief

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IN THE APPLICATION OF:

HIROYUKI SUMI ET. AL.

CASE AD6932USNA  
NO.:

SERIAL NO.: 10/728334

GROUP ART UNIT: 1796

FILED: DECEMBER 04, 2003

EXAMINER: SATYA B. SASTRI

FOR: FLAME RESISTANT POLYESTER RESIN COMPOSITION

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**APPLICANTS' REPLY BRIEF**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

The Applicants' Reply Brief is filed in response to the Examiner's Answer mailed November 1, 2007 and supplemented by mailing on November 23, 2007.

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**Status of Claims**

Claims 1-16 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Harashina et al. (WO 01/48086) in view of Takahashi et al. (US 4,742,109). Claim 17 was previously canceled. The appealed claims are Claims 1 – 16.

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**Grounds of Rejection to be Reviewed Upon Appeal**

Whether claims 1-16 are unpatentable under 35 U.S.C. 103(a) over Harashina et al. (WO 01/48086) in view of Takahashi et al. (US 4,742,109).

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### Argument

Appellants highlighted that the compositions of the present invention possess unique combination of properties in that they are simultaneously flame retardant, laser weldable, and have good impact resistance.

In the answer of November 1, 2007, Examiner contends that such properties would necessarily be present when the prior art references of record are combined.

The primary reference (Harashina et al) discloses compositions comprising polyester resins with improved flame retardancy through the use of phosphorous-containing phosphazene compound and phenolic resin combination, wherein each component in the combination may be present in amounts of 1-40 parts by weight per 100 parts of polyester resin. The reference further discloses that other flame retardants may be optionally included in the compositions. The amount of polyester, phosphorous-containing flame retardant, phenolic resin is within the presently claimed range of Claims 1 and 2. The Harashina reference does not teach 1 to 25 % by wt, based on the total weight of the composition, of thermoplastic acrylic polymer.

The prior art to Takahashi et al (4,742,109) is in an analogous field and recognizes that the addition of flame retardants to polybutylene terephthalate resins to mitigate the flammability of PBT results in a decrease in impact resistance and extensibility of the molding composition. The prior art teaches overcoming such a disadvantage by adding 0.1 to 20 wt % of polyacrylate resin to the PBT resins.

Examiner further states: In essence, Harashina et al., teach that phenolic resin in the compositions helps maintain impact strength of polyester resin and Takahashi et al teach that polyacrylate-based impact modifier, helps improve the impact resistance and extensibility of the polyester composition. Examiner then concludes that the primary and secondary reference, both teach two different additives for improving the mechanical strength of flame-retardant polyester resins, and thus it would have been obvious to one of ordinary skill to use the combination of the two additives to arrive at the presently claimed invention.

However, Appellants herein emphasize that the Harashina reference **does not teach**, as contended by examiner, that phenolic resin in the compositions helps maintain the impact strength of the polyester resin. Harashina, Col. 2, lines 12-15 states "the flame-retardant resin composition comprises a flame retardant comprising a phosphazene compound and a phenolic resin." Throughout the reference the

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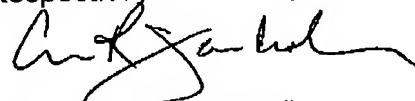
phenolic resin is associated with a part of the flame retardant component; and not an impact modifier, as suggested by the examiner. Col. 2, lines 5 – 7 state "that a polyalkylene terephthalate resin can be rendered highly flame-retardant without deteriorating mechanical properties;" implying that the mechanical properties are inherently associated with the polyester resin. Thus, examiners contention that the phenolic of Harashina and the polyacrylate of Tagahashi serve similar purposes and thus it would have been obvious to use a combination of the two additives, is not born out in the Harashina reference.

Furthermore, what compels one of ordinary skill in the art to combine the two references, when the problem at hand, that is, providing a unique combination of properties having simultaneously flame retardant, laser weldable, and good impact resistance, is not addressed by either reference? The Harashina reference, demonstrates good impact resistance, without the need for an additional impact modifier. So, why would one add an impact modifier to arrive at Appellants claim 1. There is no reasonable expectation that such a combination would give a composition having the desired laser weldable properties inherent in Appellant's Claim 1 composition.

For the foregoing reasons, claims 1-16 are allowable over the references of record and a decision consistant therewith is respectfully solicited.

If any fees are required please charge deposit account no. 04-1928, E.I. DuPont de Nemours and Company.

Respectfully submitted,



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Dated: 12-14-07

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